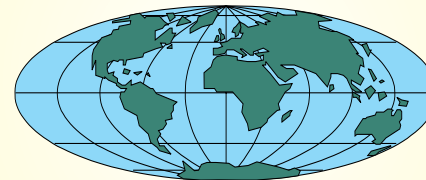




Important information about the environment and your business!

POLLUTION PREVENTION



for Paint and Body Shops



This booklet provides information about environmental issues and is produced by the Dade County Department of Environmental Resources Management.

Pollution Prevention for Paint and Body Shops

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This document is published to help educate businesses and individuals on some of the environmental issues affecting them. It suggests options that may help businesses operate in an environmentally appropriate manner. These options are based on experience and simple common sense ideas. Many of the options go beyond what is required to remain in compliance with the regulations. Please refer to Chapter 24 of the Metropolitan Dade County Code ("Metropolitan Dade County Environmental Protection Ordinance") for the specific regulations.



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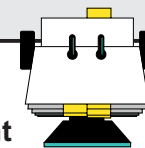
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Contact Phone Numbers



DADE COUNTY

Department of Environmental Resources Management
33 S.W. 2nd Avenue, Miami, FL 33130-1540

Main Switchboard	(305) 372-6789
Air Quality Management Division	(305) 372-6925
<i>(asbestos, refrigerant recovery, air emissions)</i>	
Industrial Facilities Section	(305) 372-6600
<i>(operating procedures, waste handling)</i>	
Liquid Waste Transporters	(305) 372-6804
<i>(lists of waste oil or hazardous waste haulers)</i>	
Pollution Prevention Program	(305) 372-6784
<i>(educational materials, waste assessments)</i>	
Storage Tank Permitting Section	(305) 372-6716
<i>(storage tank permits)</i>	
Wastewater Section	(305) 372-6500
<i>(sanitary sewer standards)</i>	

Department of Solid Waste Management
8675 N.W. 53 Street, Miami, FL 33166

Main Switchboard	(305) 592-1776
Recycling Hotline	(305) 594-1500
South Dade Landfill (24000 S.W. 97 Ave)	(305) 258-2830

STATE OF FLORIDA

Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road, Tallahassee, FL 32399-2400

Main Switchboard	(850) 488-0300
Bureau of Waste Planning and Regulation	(850) 487-3299
<i>(EPA hazardous waste permit)</i>	
Pollution Prevention Program	(850) 488-0300
Southeast Region Office (Main Switchboard)	(561) 681-6600
Emergency State Warning Point	1-800-320-0519

UNITED STATES

Environmental Protection Agency

Region IV , Atlanta, GA	(770) 347-3016
Small Business Assistance Ombudsman	1-800-368-5888
Waste Reduction Resource Center	1-800-476-8686
<i>(waste reduction information clearinghouse)</i>	

Engine, Vehicle, and Floor Cleaning

Wastewater from engine, vehicle, or floor cleaning may contain oil, solvents, and other pollutants. Regulations limit the levels of pollutants that you can discharge to the **sanitary sewer**. There should be **no** industrial discharges to storm sewers, septic tanks, or open ground. Here are some tips:



- Sweep floors regularly and then spot mop with water as needed.
- Use absorbent materials to quickly clean-up any spills. (See p.10 "Housekeeping and Inventory Control.")
- Wastewater can be collected, treated, and recycled or discharged to sanitary sewers if Sanitary Sewer Standards are met. (See p.19)
- Any detergents or solvents used to clean engines, vehicles, or floors may emulsify oils, waxes, and greases, making an oil/water separator ineffective. In these cases the wastewater should be collected and treated prior to discharge to the oil/water separator and sanitary sewer system.
- Oil must be pumped out regularly from oil/water separators.
- Consider sealing and removing floor drains and oil/water separators to reduce the chance of spills discharging directly into the sewer system.

Wastewater From Vehicle Washing:



- 1) If facility is served by septic tank and/or potable water well:

and an Existing Facility:

If you were DERM approved for this work then the wastewater effluent can be collected, treated, and/or recycled. It must then be hauled to a sewage treatment plant by a permitted septic tank hauler after prior written approval (see p.19 for contact info).

and a New Facility:

Only car wash facilities equipped with a self-contained water recycling system may be approved. These facilities should not "back wash" their filters but instead have them disposed of properly (potentially as hazardous waste).

- 2) If facility is served by sanitary sewer:

If you were DERM approved for this work then the wastewater effluent can be collected, treated, and recycled or discharged to sanitary sewers. Any wastewater effluent must meet sanitary sewer standards.

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Why Should I Read This Booklet?

It's written for you!

Special efforts have been made to produce a booklet that is informative and easy to read. Although there is a great amount of information included, it is presented in a clear and understandable format.

It's the law

As a business owner, operator, or employee, you are responsible for complying with many federal, state, and local regulations. This booklet can help you to comply with those regulations.

It's your money

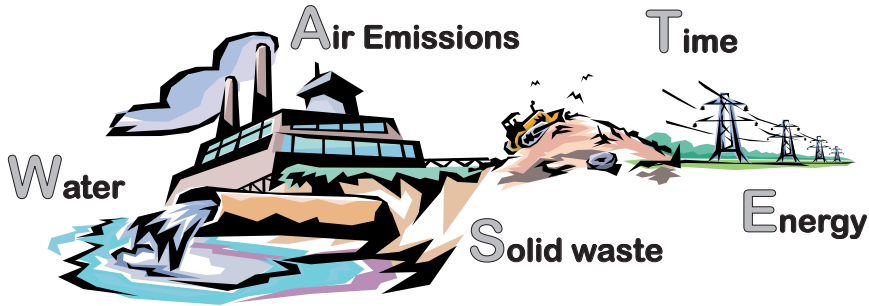
The proper handling and disposal of wastes can be expensive. Furthermore, the improper handling or disposal can lead to even more expensive clean-up costs and fines. By reducing the amount of waste that your business generates, some of these costs can be avoided.

It's our environment

We all breathe the same air, drink the same water, and walk on the same land. When we pollute the environment we are only hurting ourselves and our children.

Wastes Are Important

Wastes can be found in many different forms. Although we are especially concerned with those wastes that are toxic, all wastes should be reduced or eliminated when possible. Anything that does not leave your business as a product or service is a waste. What types of wastes are at your facility?



Hazardous Wastes

A waste is considered a **hazardous waste** if:

1) It has any one or more of the following characteristics:

Ignitable (D001)

Ignitable wastes are easily combustible or flammable. They have a flashpoint of less than 140°F or an alcohol content of 24% or more. *(The flashpoint is the lowest temperature at which the vapor of a combustible liquid can be made to ignite in air.)*



Corrosive (D002)

Corrosive wastes are liquids that dissolve metals and other materials, or that burn the skin. They have a pH of 2 or lower, or 12.5 or higher.



Reactive (D003)

Reactive wastes are unstable and react rapidly or violently to shock, heat, or pressure, or when mixed with water or other materials.



Toxic (D004)

Toxic wastes generally have adverse health effects. They need only contain a small amount of a certain material such as heavy metals or toxic organics.



Paint Mixing

- Thinning paint more than manufacturer specifications is not recommended. This can affect the paint's performance and defeat the purpose of low-VOC formulations.
- Only mix the quantity of paint that is needed.
- Small amounts of excess paint can be placed in a small container and given to customers for touch-up in the future.

Equipment and Line Cleaning



- Use paint gun cups or as short a paint delivery line as possible.
- Plan a painting schedule in order to reduce the need for frequent color changes. If possible, schedule from lighter to darker colors.
- Run compressed air through the paint lines prior to cleaning. This can force out any excess paint, that can then be collected and reused.
- Use water-borne (water-based) primers and paints in order to reduce the need for cleaning with solvents.
- Use a single solvent for all cleaning and other needs.
- A gun washer or recirculating filtration system can be used for solvent when cleaning guns and lines.
- Evaluate using a solvent distillation unit to recover spent solvents for reuse. Batch units are available for quantities as small as 5 gallons. This can be very economical depending on the quantity of solvent used. Plans must be submitted for approval and any distillation solids ("still bottoms") must be disposed of properly, usually as a hazardous waste.

Used and Scrap Parts Storage



- Scrap parts should be sold or given to metal recyclers.
- All fluids and refrigerants must be properly recovered from scrap parts prior to storage, metal recycling, or disposal.
- Used parts should be stored on an impermeable (sealed) surface under cover.

Primer and Paint Formulations

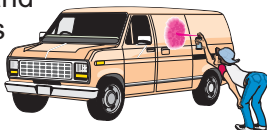
Solvents, usually composed of Volatile Organic Compounds (VOCs), are used as carriers in most paint formulations to help the paint flow smoothly and spread evenly across the surface being coated. The rest of the paint formulation is usually simply referred to as "solids". Solids are comprised of some type of resin, pigments, and a variety of other additives. It is the quantity of solids, not the total volume of paint, that determine a paint's coverage area. The solvent that you paid for simply evaporates.



Spray Cans (Very Low Solids)

90% - 97% solvent

Included as both a type of application equipment and a paint formulation, these paints contain enormous amounts of solvent to compensate for the poor quality of the application equipment.



Conventional (Low Solids)

60% - 80% solvent

These are the standard paint formulations that contain a large volume of solvent. These solvents help to compensate for imperfections in application techniques.

Low VOC (High Solids)

30% - 40% solvent

These coatings contain more solids and less solvents than conventional paints. As the solvent content is decreased, paints become thicker or more viscous, and do not flow as well. In general, this paint is less forgiving of application errors. However, due to their higher solids content these paints do cover a much greater surface area with less paint. These coatings often take longer to cure and dry, and may even require baking.

Waterborne (Water-based)

15% - <1% solvent (less water)

Water is used as a solvent and replaces most or all of the other solvents in these paint formulations. These coatings are already available as primers and base coats, and top coats are currently being formulated in the labs.



OR 2) It is listed as a hazardous waste in the Code of Federal Regulations, 40 CFR Part 261. This list is very long and may include chemicals that you use daily. If you are unsure, it is suggested that you refer to the list cited and have your waste tested by a laboratory.

Handling and Disposal of Hazardous Wastes

The proper handling of hazardous wastes is very important in order to ensure the health and safety of the public and to protect the environment. Some important things to remember are:

- Never pour waste fluids on open ground, in storm drains, or down shop drains.
- Never mix hazardous and non-hazardous wastes. Even a little hazardous waste can make the entire mixture hazardous and more expensive to dispose of properly.

Containers

- Maintain containers in good condition. Prevent leaks, ruptures and the accumulation of rainwater on the top of drums.
- If a container leaks, transfer all of the waste to a new container.
- Keep lids on, and containers closed, when not in use.
- Use funnels when pouring liquids.
- Use containers that are compatible with the waste being stored.
- Don't mix different or incompatible wastes in the same container.

Labels

Proper labeling can reduce accidents and ensure proper disposal.

This label shows some of the information that should be included.

HAZARDOUS WASTE (or NON-HAZARDOUS WASTE) FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

If found, please contact the nearest police or public safety authority or the U.S. EPA.

<type of waste>

<your business' name and address
and manifest document number>

<accumulation start date>
(the date when waste was first put in the drum)

<federal waste code numbers>

Waste Storage Areas

- Try to store all hazardous wastes in a single area, however do not store incompatible materials beside each other. Satellite collection points are allowed for work-in-progress, but should be moved to the main storage area once the container is filled or not in use.
- Secondary containment should be provided that is able to contain at least 110% of the largest container's capacity in case of leaks, spills, or punctures. It must have an impermeable (sealed) surface and should be under cover, preferably indoors. Plan approval may be needed.
- Ensure that there is sufficient aisle space between drums to allow complete inspection for proper labeling and any leaks or damage.
- *Check with the Fire Department for their requirements.*



Transportation and Disposal

- Hazardous wastes must be shipped out by an EPA and DERM permitted hauler to an EPA approved treatment, storage, and disposal facility. (See p. 19 for contact information.)
- Use reputable permitted companies for transport and disposal. You are forever liable for any hazardous waste that you generate; a "cradle-to-grave" liability. Even if you have proper documentation, you may still be a potentially responsible party to a clean-up if your waste contributes to the contamination of the environment.

Inspections and Record Keeping

- Any facility generating a hazardous waste should obtain an EPA identification number. (See p.19 for contact information.)
- Keep all records of hazardous wastes handled on-site for at least three (3) years. This includes manifests and any other records documenting amounts stored, reused, or hauled away for disposal.
- Keep records of lab tests for at least three (3) years.
- Keep land disposal restriction forms for at least five (5) years.
- Inspect storage containers and areas for leaks or damage at least once per week and maintain a written inspection log on-site for at least three (3) years.
- Keep any training records for at least three (3) years.

TYPES OF EQUIPMENT

Brush & Roller

Coating is applied by either a brush or roller. This method is rarely used, and then usually for the primer only.



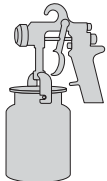
Spray Can

Paint is applied from a spray can containing compressed gases as propellants.



Conventional Air Spray Gun (Low-Volume High-Pressure)

Compressed air is used to atomize the paint and "throw" it at the surface. Air pressure can range from 40-80 psi (pounds per square inch) with an air volume flow rate of about 3-25 cfm (cubic feet per minute).



HVLP Air Spray Gun (High-Volume Low-Pressure)

Compressed air is used to atomize the paint and "throw" it at the surface, but at a much lower air pressure (10 psi or less) and with a much higher air volume flow rate than conventional paint guns. These paint spray guns are highly recommended.

Air-Assisted Airless Spray Gun

Paint is atomized and "thrown" at the part by increasing its pressure into the range of 150-800 psi. Air is supplied in the range of 5-30 psi to assist and shape the spray pattern.

COMPARISON OF APPLICATION EQUIPMENT				
Application Method	Transfer Efficiency	Finish Quality	Coating Rate	Relative Cost
Brush & Roller	>96%	Poor	Low	Low
Spray Can	<15%	Poor-Avg	Low	Low
Conventional	<25%	Very Good	Low-High	Low
HVLP	<55%	Good	Low-Med	Medium
Air-assisted airless	<60%	Avg-Good	Med-High	Med - High
Electrostatics when used in conjunction with conventional or HVLP spray guns can increase transfer efficiency by 5 -20%. (There is only up to a 5% increase when used with airless guns.) [All values are general estimates and can vary greatly depending on manufacturer, maintenance, and operator training.]				

Primer and Paint Application Equipment

TRANSFER EFFICIENCY

Transfer efficiency is a measure of how much paint actually coats a surface, compared to how much is sprayed (or applied). In spray painting, the paint that is sprayed, but never actually coats the surface, is called **overspray**. Overspray is a waste of raw materials and can be expensive. By increasing transfer efficiency and reducing overspray:

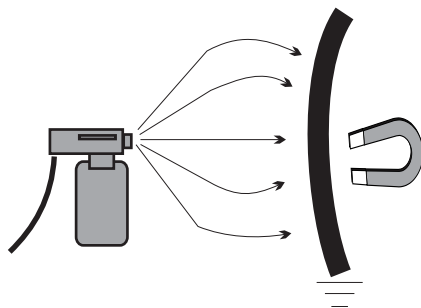
- Less paint has to be purchased to get the same coverage.
- Exhaust filters need to be replaced less frequently.
- Paint booth cleanup is easier and less frequent.
- Less Volatile Organic Compounds (VOCs) or Hazardous Air Pollutants (HAPs) are emitted when painting.

Factors that influence transfer efficiency include:

- ◆ Operator training
- ◆ Painting equipment
- ◆ Equipment maintenance
- ◆ Surface geometry

ELECTROSTATICS

"Electrostatics" in painting is the process of electrically charging the paint droplets at the tip of a spray paint gun with a charged electrode. The surface to be painted has to be electrically "grounded" and then it "attracts" the charged paint droplets to it. When properly used, this can significantly increase transfer efficiency.



Proper Grounding

The surface must be electrically conductive and properly grounded. The surface to be coated should be the closest grounded object to the tip of the gun. If not: 1) The paint is more attracted to whatever the closest grounded object is, and not the surface you're painting, and 2) ungrounded objects (including employees) in the vicinity may build-up a charge that dissipates by arcing when a grounded object is brought near. This can lead to fires or explosions and potentially result in injuries as well.

Regulated "Non-Hazardous" Wastes

Although not classified federally as a hazardous waste, there are many materials that are regulated stringently in Dade County. When in doubt, treat a material as a hazardous waste until you are able to verify that it is not, and then determine what are the correct handling and disposal measures. Some common examples of these types of wastes are used radiator fluid, lubricating oil, transmission fluid, brake fluid, or power steering fluid.

Air Emission Wastes

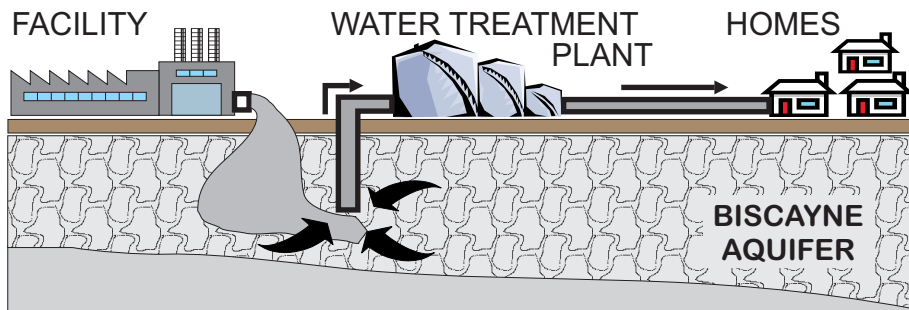
There are many wastes that are released into the air through evaporation, combustion processes, or otherwise. The release of many of these chemicals is regulated and requires an air permit depending on the quantity released. This includes particulates, sulfur dioxide (SO₂), carbon dioxide (CO₂), nitrogen oxides (NO_x), chlorofluorocarbons (CFCs), Volatile Organic Compounds (VOCs), and many "Hazardous Air Pollutants" (HAPs).

Hazardous Materials

Although less stringently regulated than hazardous **wastes**, the proper storage and handling of hazardous **materials** is equally important. Many of the storage and handling practices described above for hazardous wastes should, and in some cases must, be applied to hazardous materials as well. This includes certain labeling and spill prevention measures.

Storage Tanks

- Plans must be submitted to DERM and approved prior to installing, modifying, repairing, or removing any storage tank system.
- Most tanks require a current state registration and DERM operating permit.
- Regulated tanks must have an approved leak detection system.
- Ensure that tanks, lines, and dispensers, are constructed of proper corrosion resistant materials.
- Consider removing smaller underground tanks, such as waste oil tanks, and replacing them with above ground storage systems.
- If you have any questions about underground storage tanks please contact DERM's Storage Tanks Section (see p. 15).



In South Florida our drinking water comes from the water that fills the tiny cracks and pores in the rocks just a few feet below us. This water is pumped up to a treatment plant and then out to our homes. That's why we all must be careful not to contaminate the ground or groundwater.

Where Does That Drain Go?

It's important to know what types of drains are at your facility:

Storm Drains

These drains are for **rain water only!** They are usually found along streets or in parking lots, and discharge directly to a nearby body of water (lake, canal) or allow the water to percolate into the ground. Keep the area around these drains clean and free of spills and debris.

Drains Leading to Septic Tanks

These drains are for **domestic wastewater only!** Septic tanks allow a short holding time for bacteria to start breaking down domestic waste. From there wastewater goes directly into the ground. Industrial wastewater (even small amounts from washing chemicals off of hands) should never be allowed down these drains because:

- 1) It can kill the bacteria, often requiring a costly tank pump out.
- 2) It can directly contaminate our drinking water.
- 3) It can contaminate your property, requiring expensive clean-ups.

Drains Leading to Sanitary Sewers

These drains are designed primarily for domestic wastewater, but can tolerate very low levels of industrial contaminants. A list of these contaminant levels is available (see p.19 "sanitary sewer standards" for contact information). Sanitary sewers are made of a network of pipes that carry wastewater to a treatment plant and then it is discharged into a nearby body of water (such as miles offshore).

REMEMBER: *Never pour flammable solvents into any sewer system. This may cause an environmental and/or fire and explosion hazard.*

- particles and then progressively smaller ones. This extends the life of your filters.
- Filters may be disposed of in the trash if they are completely dry and the paint that is captured contains no toxic substances such as heavy metals (like lead or chromium).
- Solvents from gun cleaning should never be sprayed directly into filters. This is not allowed and often results in the filters having to be disposed of as a hazardous waste. Instead these solvents should be properly collected and recycled or disposed, usually as a hazardous waste.

BOOTH DESIGN

- Avoid excessively high air velocities through the booth, because this will increase overspray and reduce transfer efficiency.
- Air flow should be as linear as possible, preferably in the same direction that the paint is being sprayed.
- The following table lists requirements for spray booth design:

SPRAY BOOTH DESIGN CRITERIA (for booths with disposable paint arresting filters)	
Air Velocity	100 feet per minute at work location.
Net Filter Area	Not less than 40% of the vertical cross-sectional area of the booth.
Fan Static Pressure	0.5 inch w.g. (water gauge) at capacity to meet required air velocity.
Fan Design	Duct type with non-sparking blade material, enclosed belt housing. *
Discharge Position	Discharge stack must terminate in a vent up position to the atmosphere with minimum height of three feet (3') above the highest roof line within a twenty-five foot (25') radius.
Stackhead/raincap	Stackhead/raincap may be of the hinged-up blast damper type (through the roof) with weep through the building. Use of conical type raincaps as well as water pans is prohibited.
* All booths must also meet local Building & Zoning and Fire Department regulations. Prior to installation and operation of the spray booth, plans must be submitted, along with an air permit application for review to the DERM Air Section.	

Spray Booths and Filters

Spray booths are designed to provide a CLEAN area in which to apply paint, and also to ensure that any overspray from painting is captured and controlled. The efficient and proper design, maintenance, and use of your spray booth is important. ***All priming and painting should be performed inside a properly designed and operating spray booth that has been approved by DERM!***



KEEPING THE BOOTH CLEAN

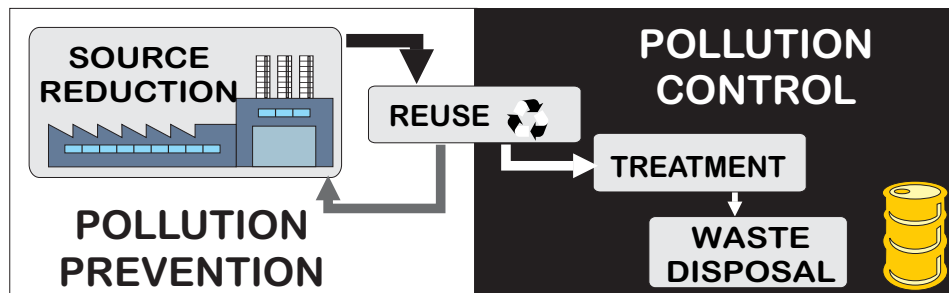
- Make sure that any air entering the booth is clean, by filtering the intake air and replacing filters regularly.
- Clean the booth at the beginning and/or end of each day's operations. This means wiping off ALL of the equipment in the booth, and that enters the booth, with a damp or tacky lint-free cloth. Floors in the spray booth can be damp mopped. This is a rare case where sweeping first is NOT recommended. See p.18 "Engine, Vehicle, and Floor Cleaning" for disposal of mop water or water from "wetting down" the booth. Discharge directly to ground through drain holes in the booth is not allowed.
- Try to only use the booth for priming and painting. Any body work, grinding, and sanding should be performed outside of the booth in order to reduce dust in the booth.
- To keep personnel from bringing dust into the booth:
 - a) Install a blow-off area for all persons to pass through before entering the booth.
 - b) The blow-off area can also have a shallow pan of water for personnel to walk through and remove dust or lint from the bottoms of their shoes.
 - c) Anyone entering the booth should be required to wear lint-free hats and coveralls.
- Keep the entrances to the booth closed at all times.

FILTERS

- Intake and exhaust filters should be replaced regularly. Filters that are loaded or clogged reduce air flow, cause fans to consume more energy, and may lead to air seeping through cracks or around the edges. Replace any clogged, damaged, or missing filters immediately.
- A good strategy is to use baffle type filters first for heavy loading and then strainer type filters for removing smaller particulates. This is sometimes seen as graduated filters, that first trap larger

What is Pollution Prevention?

Once you have generated a waste or pollutant your only choice is pollution control (treatment and disposal). What if instead, you reduced or eliminated the wastes or pollutants at the source? Then you would be doing pollution prevention by avoiding the creation of wastes in the first place! This booklet provides information on both pollution prevention and pollution control.



Benefits of Pollution Prevention

- Reduced operating costs through increased efficiency.
- Reduced risk of liability.
- An improved company image.
- Protection of the public health and the environment.

Implementing Pollution Prevention

Too often things are done a certain way because, "It's always been done that way." Well it's time for a change! DERM is encouraging every business to reduce its waste by implementing a pollution prevention program. Here's how:

- Make a commitment to pollution prevention.
- Encourage employees to participate and make suggestions.
- Evaluate the types and quantities of wastes that are generated.
- Find ways to reduce the amount of waste that is generated.
- Make the changes necessary to reduce wastes.

Many waste reduction options are based on common sense and are inexpensive to implement. This booklet contains some ideas to get you started. Your shop may already be using pollution prevention practices without realizing it. Don't forget, *"An ounce of [pollution] prevention is better than a pound of cure."*

Pollution Prevention for Paint and Body Shops

Permits

Most industrial facilities in Dade County are required to have a permit from DERM. A permit is required for shops performing "paint and body" work or "body" work only. In addition, there may be other permits that are required from DERM and other environmental agencies. These can include permits for spray paint booths, A/C repair, or even hazardous waste generation. Do you have current permits for your activities? (See p.19 for a list of contacts.)

Housekeeping & Inventory Control

Keeping your facility clean and organized is important. It reduces accidents and provides a professional environment for employees to work in and customers to see. Here are some ideas:

- Keep your shop clean and your floors dry.
- Only purchase quantities of materials that you can use.
- Mark the purchase date on containers and adopt a "First In - First Out" policy so that older materials are used first.
- Keep all containers closed to prevent evaporation, contamination, and accidental spills.
- Use drip pans to catch drips and leaks from cars. These can then be poured into proper waste storage containers.
- Use absorbent materials to quickly clean-up any spills. "Spill dry" should be picked up as soon as the spill is absorbed. Reusable absorbent pads are available that allow liquids to be "squeezed out" into a proper waste storage container. Unless lab testing indicates otherwise, these materials cannot be disposed in the trash and should be disposed of as a hazardous waste.

Shop Rags & Towels



- Unless lab testing indicates otherwise, rags covered with oil or solvents cannot be disposed of in the trash and should be disposed of as a hazardous waste or handled by a permitted industrial laundry service.
- Use rags to wipe hands as clean as possible before washing.
- Used rags should be stored free of liquids, in a leak-proof, self-closing, metal container.

Training for Painters

Proper training for painters can be the single most important factor in ensuring that painting operations are performed efficiently and economically. Because a painter is able to coat a body panel does not mean that it is being done in the most efficient manner possible. Below are some quick general tips for painters:



- Keep guns and other equipment clean and well maintained.
- Use the minimum amount of air pressure necessary for correct atomization. If the air pressure is too high, a lot of the paint bounces back or overshoots the surface. This is overspray. If the air pressure is set too low, not enough atomization occurs leading to drips, runs, and sagging.
- Keep guns as perpendicular as possible to the surface being coated. Avoid sweeping arcs with the wrist or arm.
- Keep guns at a uniform distance from the surface being coated. Usually about 6"-8" for air spray guns. This ensures optimal transfer efficiency, and uniform film thickness.
- Move the gun at a uniform speed.
- Overlap each stroke by the same amount.
- Guns should be triggered at the beginning and end of each and every stroke.
- The gun should be moving prior to being triggered.
- Exterior edges should be sprayed first.
- Paint should not be sprayed directly into internal corners, but instead each side of the corner should be sprayed.
- Operators need a clean supply of air to breathe. This can be from supplied air lines, or from using air purify respirators (APRs). Filters in these APRs should be replaced regularly. Common dust masks do not provide filtration of dangerous Volatile Organic Compounds (VOCs) or Hazardous Air Pollutants (HAPs) and should not be used alone. These chemicals have been shown to cause serious health problems.

